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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/433,389	11/03/1999	KOJI OGUMA	51441-016	2492

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WASHINGTON, DC 20005-3096

EXAMINER

NELSON, ALECIA DIANE

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 11/07/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/433,389

Applicant(s)

OGUMA, KOJI

Examiner

Alecia D. Nelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 19 September 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The corrected or substitute drawings were received on 09/19/02. The examiner approves these drawings.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 2-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Endoh et al. (U.S. Patent No. 5,218,352) in view of Burgan et al. (U.S. Patent No. 5,805,121).

With reference to the **claims 2, 3, 6, and 7**, Endoh et al. teaches a liquid crystal display circuit comprising a bias producing means (3) for producing 1/3 bias. The power switching means (8) supplies a voltage (VDD), which is divided by resistors (R1, R2, R3, and R') to provide output voltages (VLC0, VLC1, VLC2). These output voltages are

used as bias voltages for display driving means (2). Endoh et al. fails to specifically teach the layout of the LCD display as claimed however, as claimed, is an inherent structure of a segmented display.

Endoh et al. fails to specifically teach the usage of a controller including dormancy determining means for selecting within a single frame a period at least one predetermined period for which the voltage between all common and segment terminals is zero. However, there is taught a bias changing means (9), which is connected with bias producing means (3), which serves to change the resistance of a resistor (R') for producing the bias voltage VLC2. The changing means (9) changes VLC2 in accordance with the power supply changing command signal A thereby to reduce the contrast to some degree, otherwise, the contrast may become too high (see column 7, lines 30-40). By increasing the resistance of resistor (R') , the LCD driving voltage becomes smaller (see column 7, lines 52-56). Also it can be seen with reference to Fig. 4, a dormant period for which the voltage between all common and segment terminals is close to zero in a single frame period.

Burgan et al. a liquid crystal display (16) having rows and columns of pixels (22) wherein a row of pixels is turned off by applying to the row a cyclical two-level voltage (bP2) having a magnitude that, when combined with the column voltages (FP3) results in each pixel in the selected row receiving a combined voltage (BP2-FP3) having a reduced number of transitions having a magnitude that is insufficient to turn on a pixel, and having an average value of substantially zero over a cycle (see abstract and Figures 5-6).

Therefore it would have been obvious for the voltage between all common and segment terminals to be zero, as taught by Burgan et al. to thereby provide a liquid crystal display circuit for use in an apparatus, similar to that which is taught by Endoh et al. to thereby provide improved density adjustment which prevents the user from receiving an unusual impression of the display by suppressing a change in the contrast thereof while reducing power consumption.

With reference to **claims 4 and 5**, Endoh et al. teaches that the LCD display device further comprising input means for inputting signals representing pieces of information pertaining to factors causing adverse effects on the visual presentation of output information, such as drive voltage variation supplied from a main power supply to a second power supply means thereby causing a change in the amount of power supplied (see column 3, lines 20-31).

Endoh et al. fails to specifically teach that the controlling includes dormancy discarding means responsive to the signals from the input means for making a decision as to whether or not the dormant period is put in the frame period.

Burgan et al. teaches that the usage of voltage generator (36), multiplexor (34), mode control (54), and decoder (38) for determining whether or not the dormant period is put in the frame period allowing an optimum display value of zero or a display value of a hole number larger than one (see column 6, lines 19-37). With further reference to claim 5, the mode control (54) is used to determining whether the pixels driven by the electrode are in an active mode or standby mode. The mode control (54) is a

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conventional circuit for developing a high output when the standby mode is desired, and a low output when the active mode is desired (see column 6, lines 48-58).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow mode selection as taught by Burgan et al. to the device similar to that which is taught by Endoh et al. in order to reduce power consumption and provide optimum display characteristics to the user.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on (703)305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)308-9051 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

adn/ADN
October 21, 2003



DENNIS-DOON CHOW
PRIMARY EXAMINER